

THE PRESENT POSITION
OF
STATE MEDICINE IN ENGLAND,

BEING
AN ADDRESS

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BY
ARTHUR RANSOME, M.D., M.A., CANTAB,

*Lecturer on Hygiene at Owens College; Examiner in Sanitary Science to the
University of Cambridge.*

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THE PRESENT POSITION OF STATE MEDICINE IN ENGLAND.

THE history of a science seldom flows onwards like a stately river, in a steady even course of uninterrupted progress. There are usually successive steps in knowledge, each taking its starting point from some great generalisation, or from some discovery that opens up new fields of research, fresh regions for further inquiry.

Within the bounds of these "induction-periods," as they have been termed by Dr. Whewell, there are epochs of comparative quiescence, times even of depression, in which knowledge may be lost, and may have to be rediscovered; or at best, times in which men are simply engaged in building the details of the science up to the framework already raised by some preceding "master mind."

Then come signs of the approach of some further great generalisation—preludes to further discovery—and at length another wave of knowledge breaks upon the world.

The history of State Medicine presents no exception to this course of events—though unhappily the quiescent periods have often been wearily long—and the truths that have been lost sight of and that have needed fresh discovery are unusually numerous. On many points our knowledge is only now again abreast with that possessed ages ago by the Jews, and by the ancient people of Assyria and Egypt, and our practice in many respects still falls lamentably behind that of the Romans and the Greeks.

In England the course of Preventive Medicine shows many long stagnant periods, and not a few heavy penalties for the neglect of hygienic laws that had long before been discovered. Each great step forward is however usually marked by the disappearance of some disease that had previously weighed heavily upon the nation ; and thus we may note either some unconscious advance of the people in hygienic practice, or the recognition by the State of the possibility of preventing some cause of disease.

In the disappearance from our shores of such diseases as leprosy, the "sweating sickness," the great plagues and other epidemics of the middle ages, we probably see evidence of the reformation of national social habits in matters of clothing and cleanliness, and other modes of life. In the decadence of others, such as ague, typhoid fever, and cholera, the improvement has coincided with improved drainage and better water supply ; but in the amelioration of these diseases, as well as in the banishment of such fearful complaints as the jail distemper and scurvy, we may mark the direct outcome of legislative interference. The deplorable outbreak of the last-named disease, in the Arctic Expedition of 1875, was simply an instance of the slowness with which truths, well recognised by our profession, filter down into non-medical minds.

When we look around us to learn the present position of sanitary reform it might, at the first glance, appear as if we were now advancing on the top of the wave of progress. The importance of the national health has been fully recognised by the Legislature. Two ministries have attempted to deal thoroughly with the subject, and though we may have had recalled to us more than once, in reference to it, the sad utterance of Solomon, "Vanity of Vanities,

all is Vanity," still there can be no doubt that the attention of the people has been aroused; Sanitary Boards and Officers of Health have been elected in all districts, and the education of the country in sanitary knowledge is fairly begun.

But notwithstanding these encouraging marks of progress it would be unwise to omit to notice certain indications in a contrary direction. These may be, and probably are, merely the reflux to the wave, the backward ebb that accompanies even the incoming tide; but just as in all Governments there is an "opposition" more or less active, and ready to take advantage, and to make capital out of any mistakes in the administration, so it may be now in sanitary matters.

At best there may be misunderstanding of the teaching of scientific men, and this may lead to battle—battle in the palpable interests of the pocket, as against questionable future gain in the direction of health.

In many parts of the country, doubtless, local boards are to be found taking full advantage of the counsel of well instructed medical officers, whose capacity and zeal are tempered with discretion; but in others there are coteries too often led by self-interested persons, who, under the specious cry of extravagance render ineffective all sanitary measures.

Worse still, for truth should be told, we have heard of attempts to reduce medical officers to ignominious and disgraceful silence, by intimations that on this condition alone shall they be permitted to retain their salaries.

There have been of late also certain utterances, by men high in authority in the sanitary and scientific world, which, though they may provoke a smile, should on an occasion such as this be treated seriously.

More than one of the presidential addresses recently delivered, have contained ominous references to so-called Malthusian theories, and the humorous opinion of Montaigne has been seriously adopted, that "it is of little use to attempt to abridge the course of evils—whoso attempts to shorten them by force, only lengthens and multiplies them, and irritates in place of appeasing them."

Quetelet's doctrine also finds favour, that "if by dint of care, the Art of Healing attains to the closing of some few of the hundred gates that lead to death, others do not delay to open wider still."*

Then also we are referred to the "much-belied Malthus," as he is called, and we are told, *à propos* of our present fearful rate of infant mortality, that if it were not for this, "the increase of the population would be prodigious, for it is the means whereby the annual excess of births over deaths is kept down to the reasonable proportion of 12·8 per 1,000 of the population,"† and we are reminded, even at the present rate of increase, that by the rule of geometrical progression, "At the end of another generation, the population of England will become ... 42,000,000

At the end of the 2nd 74,000,000

„ „ „ 3rd 130,000,000

„ „ „ 4th 230,000,000

„ „ „ 5th 400,000,000"

and so on,‡ heaping Ossa upon Pelion, until "at the

* In a recent sanitary report of an eminent health officer we have the following paraphrase of the above passage :—"Although we have in a measure stopped the ravages of some diseases, still in order to bring up the death-rate to what may be called its *normal percentage*, other diseases must have and have increased in a like ratio."—Dr. C. Meymott Tidy, Report on the Sanitary Condition of Islington for 1875, p. 9.

† Dr. Letheby.

‡ "Long before that time arrived," says Dr. Letheby, "the sanitarians who struggle to bring about this condition would be considered dangerous enemies to the public weal."

end of the 20th generation, there would be more than fifteen such worlds would contain, each as densely populated as our globe is at present.”*

It can hardly be supposed that there has been any conscious intention of bringing these opinions to a practical issue, or of pushing them to their logical conclusions. No man is likely to propose the Euthanasia of even sickly infants, or to suggest that we shall return to the ways of our forefathers in the matters of drainage, scavenging, or water supply—but, seeing the high-standing and influential character of the men who have put them forth, there is good reason to fear that they may increase the natural apathy of men’s minds towards these questions, and that they will materially impede the progress of practical sanitary reform. More than once have I been asked by intelligent men whether we are not doing more harm than good by our sanitary work.

Now, in the first place, never was man more belied than Malthus is by his new found friends. He never, like them, proposed to rest satisfied with a high rate of mortality—nor to look calmly on while this modern massacre of innocents was taking place—for he says, “a decrease of mortality at all ages is what we ought chiefly to aim at.” “It is undoubtedly our duty and in every point of view highly desirable to make towns and manufacturing employments as little injurious as possible to the duration of human life,”—and again, a large infantile mortality is most wasteful to a State, as “a large part of its produce would be distributed without return to children who would never reach manhood.” “A young person saved from death is more likely to contribute to the creation of resources than another birth. It is a great loss of labour and food to begin over again.”

* Presidential Address of T. Hawksley, C.E., delivered before the Health Section of the National Association for the Promotion of Social Science.

It is very clear, therefore, that the sentiments to which I have just taken exception, have no right to claim the authority of Malthus to give them currency.

It is almost amusing to notice the perplexities into which men fall when they give themselves up to theories of population.

Malthus himself never attempted to prove the chief propositions upon which his theory is based, and the experience of this country has amply shown that the power of getting food may exceed manyfold the growth of the population.

Again, all the preventive checks named by him, except the prudential check, must inevitably lead to a grievous deterioration of race. The checks that he never really sanctioned, but which our friends are apparently afraid to interfere with, pestilences, unwholesome trades, misery and vice, all these necessarily lower the standard of life, and endanger the future well-being of the nation.

The prudential check to population would of course be a splendid invention, if it could itself be prudently regulated, or if individual judgment could be trusted. It is still a question how far restrictions upon marriage can be imposed by the State without harm, but if the matter be left to individuals, as Galton has shown, only the improvident will breed and the race will infallibly become of a lower type.

Sadler's theory of population, again, brought out as a counter-blast to Malthus, was shown by Macaulay to be destitute of all foundation; and Doubleday's theory, though more may be said in its favour, turns out when examined to be even more alarming than that of Malthus.

Doubleday shows, in accordance with our every day gardening experience, that "whenever a species or genus

is endangered, a corresponding effort is invariably made by nature for its preservation and continuance, by an increase of fecundity or fertility, and this especially takes place whenever such danger arises from diminution of proper nourishment or food."

But in his anxiety to controvert Malthus, Doubleday has been unable to see that, under certain very probable contingencies, his supposed law intensifies the danger of over-population. Mankind according to him is in a position of unstable equilibrium; let it once reach a certain degree of starvation and misery and it will then propagate at a frightful rate, and will soon fill the world with hungry and therefore prolific beings. Our only safety from such a fate would thenceforward lie in universal aldermanic feeding, in public kitchens for turtle soup, or else in a timely recourse to cannibalism.

The remedy for over-population apparently in favour with modern sanitarians, is, however, the worst of all, for, if we may judge from the addresses I have quoted, it would chiefly consist in giving full swing to the causes of disease.

I cannot understand for what purpose the spectre of over population has been paraded before an audience of Medical Officers of Health or a Social Science Congress, if the inference were not intended to be drawn that we must not be over active in our sanitary measures. Nay, by some it is boldly affirmed. "Medical science," says Mr. Greg, "is mitigating suffering, and achieving some success in its warfare against disease; but at the same time it enables the diseased to live. It reduces the aggregate mortality by sanitary improvements and precautions; but those whom it saves from dying prematurely it preserves to propagate dismal and imperfect lives."

It appears to have been forgotten that most of the evils that we deplore in our town populations, the diseases and feebleness of constitution from which they suffer, are the direct outcome of the unhealthy circumstances in which they live. If the conditions of existence in towns remain as they now are—if the fever nests, the breeding places of scrofula and consumption, the temptations to intemperance and vice, are left unchecked to do their malignant work, then indeed we may certainly look for deterioration of race. But sanitarians will not be responsible for the result.

Without in any way undervaluing the importance of the subject of overcrowding, yet as a medical man I protest energetically to its being brought forward as it has been in these discourses.

It is only too certain that we shall from time to time have to deal with the results of over-crowding, and to do our best to diminish infant mortality; but I submit that the control of the growth of the population is in no way our concern, as guardians of the public health.

It will be the first duty of statesmen to consider how best to deal with the augmenting masses of people collected together in our towns, to favour movements of the population, to promote emigration, to remove restrictions on trades, and to give no encouragement to improvident marriages by an injudicious system of poor-law relief—but these are simply our duty as citizens, not as medical men; and even if it were desirable we can see plainly enough, that no efforts of ours will avail to check the natural expansion of the nation.

The increase of the population in geometrical progression has, as Dr. Farr has shown, nothing “fatal or inexorable” about it. At any time it may become a decrease in geometrical progression in certain groups of

the population. "Old families outlive not three oaks," says Sir Thomas Browne; heiresses are notoriously unprolific; whole races of men who enjoyed all the comforts and luxuries of life have ceased to be—"the high Athenian breed has decayed and disappeared," and "a surprising number of the ablest men have left no descendants."*

The average growth of the nation is in truth brought about simply by a preponderance of the fertile over the infertile marriages, and thus may be compared to many natural operations, whose course depends upon the opposing influences of favourable or adverse conditions. At any time by the action of the latter it may be checked or altogether hindered. Hard times, bad harvests, and many other circumstances are well known to affect the marriage and the birth-rate, but there are probably others that have yet to be discovered. The direct influence of food and drink, the counteracting effects of intellectual and moral culture, the pressure of civilization upon the inferior types of mankind, these all in their way affect the rate of increase, and I think we may safely leave the issue in the hands of Providence, and say with Montaigne "*Laissez faire un peu à la Nature, elle entend mieux ses affaires que nous.*"

But there is another count in the indictment against Sanitary Science, somewhat contradictory to the first, perhaps, but this does not prevent its being used.

Having pointed out the dangers of over-population and of extending the average term of human life, our critics next proceed to taunt Sanitary Science with its powerlessness in this regard.

The death-rate of England has notoriously been nearly stationary (at about 22 per 1,000 during the past thirty or

* Galton. *Hereditary Genius*, pp. 343-346.

forty years), and because it has not varied, therefore say they it is invariable, and by way of enlisting in their favour the powerful genius of the pocket, they point out the uselessness of the past expenditure of public money upon sanitary works.

“Sanitary Science, as at present applied,” says Mr. Hawksley, “although in other ways of infinite benefit to the community, is not capable of materially extending the limits of life which Nature has in her wisdom prescribed.”

“Our municipal debts principally incurred on this head now amount to nearly one hundred millions of pounds sterling and are fast increasing . . . without any remarkable effect having been produced in or towards the prolongation of life.”*

There is undoubtedly something very seductive in the sight of an uniform series of figures. Even hasty conclusions based upon them smack somewhat of the authority of inductive science. It is not surprising, then, that men should begin to think, that the persistently heavy death-toll of the nation was their fate, not to be avoided by any efforts of theirs, and accordingly we come upon such phrases as the “normal death-rate,” and “the limits of life which Nature has in her wisdom prescribed.”

But we hardly need to be warned that sometimes statistics are “like the sieve of the Danaides, beautifully reticulated, orderly to look upon, but which will hold no conclusion.”†

* Address by Thomas Hawksley, C.E., p. 14.

“A feeling is rapidly gaining ground that the sanitary schemes which have been imposed upon the country by Parliament, are either of very questionable utility, or have been carried out by local authorities in a very negligent and inefficient manner, while the enormous and rapidly increasing expenditure which they involve is becoming a matter for very serious consideration.”—Mr. Baxendell, *Proc. Lit. and Phil. Soc.*, vol. xvi., p. 70.

† Carlyle, *Past and Present*, p. 7.

In this case assuredly the supposed induction utterly fails, and I affirm positively that there is no natural law that causes nearly half the children born to die before they are five years of age, as in Liverpool; nor that limits the average duration of life, as in Manchester or Glasgow, to twenty-five years.

It would be as correct to speak of drunkenness as the “normal condition” of mankind, or of a “reasonable proportion” of murderous assaults, or of the atrocities in Bulgaria as having been benignly ordered by the wisdom of Providence.

By a parity of reasoning it would have been equally just for the former master of the Rotunda Lying-in Hospital, in Dublin (from 1758 to 1785), to have affirmed that the “natural” mortality of infants within the first fortnight was one in every six, born alive, and yet improved ventilation alone reduced the rate to one in every 104.

A similar acquiescence in the laws of fate might have led us to regard the mortality in the army before the Crimean war as the “normal death-rate” of men who had been chosen for their health and strength, and yet, year after year, these men died at twice the rate of the unhealthiest populations of English towns.

Happily this view was not taken by the Royal Commission which considered the subject in the year 1854, and the result is shown in the following table:—

MORTALITY PER 1,000 OF STRENGTH.

	1830 to 1837.	1837 to 1847.	1863 to 1872.	1874.
Household Cavalry ...	14.5	11.1	} 9.17	8.79
Cavalry of Line	15.3	13.5		
Foot Guards	21.6	20.4		
Mediterranean Stations.	21	16.4	11.2	7.27
Canada, &c.	23	17	9.49	6.0
Jamaica, &c.	91	59	17.05	16.9
Madras } India {	52	...	} 24.22	14.22
Bengal }	44	...		
Ceylon	49	...		
			21.95	6.04

Rates of Mortality at the same ages prevailing in healthy country } populations	7.7
In England and Wales	9.2
In Manchester.....	12.4

Taken by themselves the figures of this table would afford a triumphant proof of the efficacy of sanitary regulations. Similar though less striking results have also been obtained in the cases of convict prisons, which from the pest-houses of Howard's days have now become models of hygienic management.

The regular rise of small-pox every five or six years, as shown by the mortality from this cause in Sweden, might have been regarded as inevitable before the introduction of vaccination, and yet by means of Jenner's great discovery how completely it has been avoided in this country since the year 1810.

If any proof of the efficacy of sanitary measures were really needed, it would in truth be afforded by an inspection of that very "stationary" death-rate that is now regarded as an opprobrium to the science of public health; and we may say further, that so far from encouraging a tendency to "rest and be thankful," it should urge us to make more strenuous efforts lest worse things come upon us.

A very brief survey of Dr. Farr's most valuable supplement to the Registrar-General's return shows, that the death-rate of England is by no means uniformly stationary from decade to decade. It is the nature of most steady averages, that they are made up of a sufficient number of varying figures to give constant results, and accordingly we find that this apparently uniform formula contains both increasing and diminishing figures—returns, 1st, from a large number of places in which the death-rate is diminishing, and, 2nd, I am sorry to say from a still larger number in which it is stationary or increasing.

Now with regard to the first series of districts in which there has been a palpable diminution of the death-rate, we are at once struck with the fact that in nearly every

case, important sanitary works have for a number of years been steadily carried on in them—that in many cases the improvement in the health of the places immediately followed the introduction of improved drainage or better water supply, and further, that the chief amelioration took place in those classes of disease ranked as preventible by sanitarians.

Dr. Buchanan's table published in 1866 shows this in a striking manner, and since then, the Registrar-General has published a list containing several other striking examples of the same facts.*

I have also taken pains to extract from the Registrar-General's tables all the towns in which there is a diminishing death-rate, and I find the coincidence between this improvement and long continued sanitary work almost universal.

Unfortunately the saving of life in the first series of districts is balanced by the increased number of deaths in the second class, and this is truly a matter for national concern. We have seen that the sneer at the powerlessness of sanitary reform is unfounded, but it is evident that in a large number of districts this work is either inefficiently carried out, or that the pressure of forces hostile to life has increased beyond the power of sanitary measures to cope with them.

It is probable that both these conditions are present conducing to the evil result, and it behoves all men who love their country to inquire concerning them and to do their best to change the direction of the current of mortality.

It is not difficult for any one to see that within the last few years several morbid agencies have materially increased in their pressure upon English populations, and it

* For both these tables see Appendix.

may perhaps be possible in the case of some of these influences to make an approximation to the actual extent to which they have affected the death-rate.

Let us take three only of the hostile circumstances that have thus increased, and we shall find that they will more than account for the heavy mortality, and that still more disastrous results would have been produced had not some ameliorating power also been at work amongst us.

1. The altered character and increased size and density of town populations.

2. Increased use of intoxicating drinks.

3. Imperfect care and nutrition of children.

Let me try to bring home to you the baleful change that has come over most of our great towns in the course of the last thirty years—and let us take this city as an example.

Hollingworth, the old historian of Manchester, writes thus enthusiastically of it, rather more than two centuries ago—

“It farre excelleth the towns about it, for the beautiful shew it carrieth, and for resort to it. Yea! it is the fairest, largest, and most populous town in all the country;” but 150 years after this epoch, when Manchester was yet only one-tenth part of its present size, Dr. Aiken already pointed out that it “vies with or exceeds the Metropolis, in the closeness with which the poor are crowded in offensive, dark, damp, and incommodious habitations.”

Manchester was then doubtless bad enough, and as it rapidly increased in size it did not improve in these respects—still at that time a large proportion of the well-to-do and upper classes lived within its precincts. But of late years another change has come over it—a change in the nature of its population. Thirty, or even twenty years ago there still remained, within the boundaries of the

registration district, many of the upper and middle classes of the population. Now this is changed; all who can afford it, including most of the shopkeepers, and even the very doctors themselves, now rush off, as if impelled by some centrifugal force, and leave the town to the work-people and their families. It is throughout a "*cité ouvrier*," without the arrangements needful to make an artisan city healthily habitable.

In one large district, that of Ancoats, there are probably not twenty houses in which a single domestic servant is employed.

The consequence of this flight of the upper classes is, not only that the most unhealthy portion of the inhabitants is left behind, and those least able to guard themselves, and their young, from the increased weight of the depressing influences of town life, but the wholesome example of healthy social habits is also withdrawn, and the people are left unheeded to their own unwholesome ways.

This is one way in which most towns are deteriorating in the character of their populations, but they are also much more densely packed together.

In his supplement, Dr. Farr tells us that "in the last twenty years the towns of England have increased from 580 to 938, and their populations from nine to fourteen millions."

In many places also there are twice the number of persons on the same space of ground as there were twenty-five years ago.

Now, we know that town life is necessarily more unhealthy than country life, and the difference between them is measured by the fact that the urban rate of mortality is 24 per 1,000, as compared with 19 per 1,000 in rural places; and, if we were to take the above estimate

of five millions of additional inhabitants in our towns, we should find that about 25,000 additional deaths every year have probably been due to the unhealthy influences that bear sway in towns.

And there is yet another way in which a calculation may be made on this point.

Dr. Farr has shown that, when similar populations are taken, the mortality regularly increases, in a certain proportion, as the density.

In the following table may be noted the definite way in which an increase in the mortality takes place as the population gets more and more closely crowded together.

Mean Annual Death-Ratio.	Density.	Births.	Deaths.	Annual Increase of Population.
	Persons to a Square Mile.			
15 39	315	35·11	22·00	11·99
15 17	166	30·22	16·75	14·69
18 20	186	32·19	19·16	7·53
21 23	379	35·78	21·88	13·82
24 26	1718	38·75	24·90	18·59
27 30	4499	40·16	28·08	13·28
32 (Manchester)	12375	37·33	32·49	3·22
39 (Liverpool)	65823	37·57	38·62	12·33

Now, instead of comparing different places together in this regard, the density and mortality of the same town, at two different periods, may be made the elements of calculation, and the differences between the actual and the estimated death-rates will both show the usual effects of overcrowding, and will at the same time enable us to judge whether any effect has been produced in the interim by sanitary improvements.

My friend Mr. Alfred Neild has kindly made the necessary calculations, from the data supplied by Dr. Farr, for a number of towns in which the density has increased, whilst the mortality has either been stationary or has

diminished. The results are given in Table III. in the Appendix, and are sufficiently striking. In many towns the actual mortality is less by several deaths in the 1,000 than the calculated mortality, and the total saving of life in the towns named is many thousands of lives per annum.*

(2) The second increasing cause of ill-health is *Intemperance*. How shall we estimate the effect of this vice upon the nation?

That it has a very potent influence as a source of disease no one can doubt who has noted the physical condition of the poor creatures who turn from the doors of taverns, and who may often be subsequently tracked to the poorhouse or to the hospital. That the consumption of alcoholic drinks has greatly increased is also certain enough, seeing that the expenditure upon them has doubled in the space of thirty years, and that apprehensions for drunkenness have more than trebled in the same period.

But there is no absolute measure of the result. There has, no doubt, been of late years a large increase in the mortality from diseases of the heart, liver, and kidneys—organs especially affected by excessive drinking—but we are not able to state numerically the number of victims thus annually carried off.

Some approximation to the truth may, however, be made by comparing a temperate population with one in which alcohol is freely used. I am informed by my friend Dr. W. Roberts that, about thirty years ago, in

* It is possible that the figures given in the table may be regarded rather as invalidating Dr. Farr's law than as proof of the effects of sanitary reform, but from the admirable Supplement to the Registrar General's Annual Report it appears that, in spite of the improvement that has taken place, it is still possible to range all the adverse influences that accompany increased density in one mathematical formula, and that "the mortality districts is nearly as the 12th root of their densities."—Supplement, p. clviii.

some parts of Wales an experiment of this kind was made on a large scale. At that time a wave of teetotalism swept over the country to such an extent that most of the public-houses were closed, and most of the inhabitants of whole counties abjured the use of alcohol.

This was especially true of the county of Anglesey, and the movement had died out to a great extent by the year 1850.

Now when we compare the mortality in this county, in successive decades, we find that it has steadily increased from 17 per 1,000 in (1841-50) to 19 per 1,000 in (1851-60) and to 21 per 1,000 in (1861-70).

The density of the population has remained without change. The inhabitants have certainly improved in material comfort in the last twenty years, and no special unhealthiness has prevailed in the island. May we not, then, with some probability, ascribe a large part of the increased mortality to the increase in the use of alcohol? If so, we have a rough measure of the effects of drinking upon the death-rate of the country, and we shall probably not be far wrong in estimating it at 40,000 or 50,000 deaths every year, and the increase at from 20,000 to 25,000, or at 2 or 3 per 1,000.

3. *Infant Mortality*.—There remains the third element of increasing mortality, that due to lack of care and improper nutrition of children.

The enormous difference in the mortality of children in different places points to the vast amount of preventible mortality among children now going forward.

A large part of it may probably be ascribed to the influences that have already been mentioned, but it concerns us to know that it is distinctly increasing of late.

The following table kindly given to me by Mr. W. Royston shows that, whilst the adult mortality of the

country has on the whole lessened by 0·17 per 1,000, the mortality under five years of age has increased 1·5 per 1,000, in the fifteen years ending 1870—in other words, that the already frightful infant mortality has increased by nearly 9,000 deaths every year.

ENGLAND AND WALES.

Years.		Total Mortality per 1,000.		Mortality under 5 to population under 5.	
1838 to 1840	}	22·4	Average of 18 years 22·47	66·55	Average of 18 years 66·66
1841 to 1845	}	21·4		63·9	
1846 to 1850	}	23·35		67·0	
1851 to 1855	}	22·7		69·15	
1856 to 1860	}	21·85	Average of 15 years 22·3	67·25	Average of 15 years 68·16
1861 to 1865	}	22·6		69·05	
1866 to 1870	}	22·45		68·2	

Taking all these points into consideration, we may see plainly that the increased weight of morbid agencies in the last quarter century can hardly be estimated at less than half a million of lives in a decade. In other words, that unless some mitigating influences had been present, the average death-rate of the country at the present time would have been at least 24 or 25 in the 1,000 instead of 22. I venture to claim a large part, if not the whole, of this saving of life as due to the improved sanitary administration of the country, even though so imperfectly carried out as yet.

But a recognition of this fact by no means blinds us to the many defects in this administration. On the contrary, it forces upon our notice that much better results would probably have been obtained, if the laws relating to the public health had been framed upon the lines so frequently pointed out to the Legislature by this great Association.

Unfortunately the forebodings of your State Medicine Committee with regard to the working of the sanitary Acts have been shown to be only too well founded. Everywhere complaints are now arising as to the scope given to petty local authorities for jobbery, and for the selfish protection of private interests to the injury of the public health. We constantly hear of the difficulties thrown in the way of health officers by the confusion of the boundaries of districts for various purposes—for poor-law guardianships, for urban and rural local government, for vaccination inspection, and for the registration of births, deaths, and marriages. All these difficulties were foreseen by your committee, and they have greatly hindered the progress of sanitary reform in England.

Englishmen are apt to take some pride in their neglect of logic in matters of national government. They have won more than one victory by not knowing when they were beaten, and it is quite true that in the long run, by perseverance and at a prodigious cost, they succeed notwithstanding their blunders where other nations would have failed, but assuredly they hardly ever undertook a more hazardous and costly experiment than that attempted in framing a Public Health Act without help from medical men. We all know now that no counsel was then taken from the most able official adviser to the Local Government Board, whose vast and matured experience on the subject would have been of infinite value, and for the lack

of which the greatest confusion has ever since reigned in sanitary administration.

It is indeed remarkable at how many points the machinery of preventive medicine in England is left without any firm foundation.

Thus, 1st, by the Act of 1872 it was made compulsory upon all local authorities to appoint medical officers of health, but nothing was said as to the qualifications of candidates for the office except that they should be "legally qualified medical practitioners." In spite of the testimony of such men as Dr. Parkes, it was assumed that no special training was needed for the office, and as, moreover, nothing was said in the Act as to the salaries of these men, the letter of the law was in many cases kept, and its spirit violated by appointing, at merely nominal salaries, men who were already fully occupied in general practice. We have accordingly witnessed the absurdity of a sanitary organisation resting upon the foundation of medical officials who, except *suâ sponte*, have received no special instruction in their duties.

To the honour of the profession be it said, most of the men appointed have diligently studied the subject since their appointment, and would themselves be the first to bear testimony to the absolute need of instruction, but the mundane providence of Parliament cannot take much credit for this. Moreover, after all their study, no opportunity has even yet been afforded of testing the knowledge gained, nor of proving that they are now better equipped for their office.

No portal has yet been provided by which general practitioners may authoritatively enter the department of State medicine to which they aspire, and only one University (that of Cambridge) has in the interim offered an examination in the subject open to all comers.

It would almost seem as if it had been the intention of our Governments to degrade the office of State Physician as much as possible. The position of medical men in the army and navy is still not all that could be desired; but it is infinitely better than that of most medical officers of health. The marvel, is that so many able men should have been found to accept the post. They have, as we have seen, no State qualification. Most of them are appointed over small districts at paltry salaries, and for short terms of office; or if by the combination of districts their areas are made larger, and men are tempted to give up private practice in order to accept them, their tenure of the post is most uncertain, and at any time their districts are liable to be lessened and honeycombed, by the action of sundry petty authorities, who recede from the appointment often, I fear, from self-interested motives. The position of these men is, in fact, that of a servant with many masters, and if they are too energetic or too freespoken in their reports, their paymasters may turn them away at the end of their short term of office without any appeal to a higher tribunal. It is notorious also that the "personelle" of local boards has not improved of late years.

Again, the object of all sanitary administration is the removal of the preventible causes of death; and for this purpose it is absolutely necessary that correct statistics of the causes of death should be obtained, and that their place and time of origin should be immediately brought under the notice of those who have to try to remedy them. But no provision now exists for doing this. Successive attempts have been made by Dr. Farr, assisted by this Association, to obtain, in the first place, some verification of the cause of death—but hitherto without success—and accordingly both for immediate service, and for scientific

investigation, the magnificent series of figures collected by the Registrar-General are practically almost useless.

Vague and unscientific names are given to the causes of death. At one time one title is in fashion for the same disease, at another it is interchanged for another, its place and time of origin are left unrecorded, and it is thus almost impossible from these tables to trace the progress of sanitary work or to discover the influences that bear upon human life.

It was well said by Archimedes that if he could get a suitable fulcrum a "*πὸν στῶ*" for his machinery, he could move the world, but without this a grain of sand is not less immovable.

Take only one more instance of the loose way in which the subject of the Public Health has been dealt with by the Legislature. It is one of the chief duties of a medical officer of health to take immediate measures for stopping the spread of epidemic disease. Now, an infectious complaint when it originates in a district can only be successfully checked at its outset. If it is to be "stamped out" at all, the first smouldering sparks must be noticed, and precautions taken to prevent them from lighting up a general epidemic. It is strange to remark how completely this obvious truth has been disregarded in framing the various Acts that deal with the subject.

In the Public Health Act of 1875 there are abundance of directions as to the building of hospitals, the provision of ambulances and mortuaries—fines for the exposure of infected persons, and infected garments, but no provision whatever, except in registered common lodging-houses, for early intelligence being sent to the Health Officer of the first appearance of the disease.

The committee of the Sanitary Association of this city was among the first to point out the need for prompt

intelligence of the presence of an epidemic, and it has been pressed upon successive Governments, though hitherto without avail, by petitions and memorials and deputations from this British Medical Association, and from the Social Science Congress.

It is not surprising therefore that on all hands we now hear complaints from medical men of their feebleness in the presence of infectious disease. And what is perhaps of still more importance, we find that when the burdensome provisions of the Act are put in force, without producing any real effect upon the disease, people naturally rebel against the law, and sanitary science is discredited.

We see, then, that whilst on the one hand the greater activity in sanitary matters throughout the country has been of immense service, and has saved many thousands of lives, yet there are still many directions in which further improvement is urgently required.

We now only just hold our own, and we need all the help we can get to fit us for our warfare against the deadly foes that still hover around us, and pick off many useful lives.

It would perhaps be wise if I were to stop here—if I were to content myself with fault-finding only. It is always easier to criticise than to create; and the difficulties of statesmen have had ample illustration during the past session.

Moreover, if it were my object simply to attack other men's schemes, and to leave no opening for a return of fire, it would be better to abstain from setting up any scheme for the improvement of sanitary administration in this country. I may also frankly say that I should not dare, out of my own crude imaginings, to offer any suggestions towards such an object, but the subject has been thoroughly worked out by others. In many of its

ramifications it has been most ably dealt with by men of powerful grasp and wide experience—both in and out of office.

Within the last ten years much discussion has taken place with regard to the improvement of the sanitary administration of the country. At one time the subject was taken up by the General Medical Council, and an important memorandum was issued, but for some reason that does not appear, it has not been further dealt with by that body. Our own Association also conjointly with the Social Science Association have considered the subject, and the joint committees have issued several reports.

From the writings also of such men as Mr. Simon, Drs. Buchanan, Farr, Rumsey, and Stewart, ample stores of material may be drawn, for framing a scheme of what true State medicine might become, in the good time that always lies before us in the future.

Let us, therefore, for a few moments indulge in a dream of what may come to pass in sanitary reform; and since now-a-days events march so rapidly, let us hope that our air-drawn edifice may be crowned sooner than we look for it. Let us at least have the pleasure of thinking that it might come to pass before the termination of our present Queen's beneficent reign. Nearly all the Acts bearing upon the public health have received her fiat, it would then be a fitting thing that our sanitary Atlantis should still have her hand at the helm.

Let us suppose, then, that at this somewhat uncertain epoch in our national history, there will be a perfect sanitary organisation, with a head as well as a body and limbs, and not the low type of molluscos organisation that exists at the present time.

For this end there should be a Minister of Public Health, chosen not from political reasons alone, but like

the Viceroy of India, because he is well acquainted with the details of his duty, a man able to rule—and ready to answer for his actions to Parliament.

He would preside over the department of Public Health, including medicine and medical police, and he should have the aid of a staff of assistants specially skilled in the several departments of the subject—hygiene, vital statistics, pathology, toxicology, sanitary engineering, and sanitary physics.

There would also be a College of State and Legal Medicine, with all necessary appliances, such as laboratories for original research, a technical museum, and a library. In the laboratories investigations might be carried on upon the many problems that continually arise in these subjects—inquiries as to the origin and nature of diseases, the effects of different kinds of food, the best means of disposing of refuse material, the treatment of sewage, disinfection, ventilation, heating, various toxicological inquiries, and other matters that are still under debate.

In this way the costly experiments now made in sanitation would be avoided and conclusions reached that would be at the command of local boards of health.

A Veterinary Department should also be founded wherein could be studied the diseases of animals and their relations to human ailments.

In the Statistical Department many kinds of vital statistics besides those now collected might be received, such as periodical observations on the growth of children, and on the stature and physical development of the various classes of the population engaged in different occupations, Weekly returns of disease, especially of all cases of infectious disease, would necessarily be collected in each district, and telegraphic information of the presence of an epidemic would be at once reported through the

local medical officer, as soon as the diagnosis of a case was made out. As immediate use of this information would already have been made on the spot, the best opportunity would thus be afforded of stamping out the disease and preventing its spread.

Through this college every candidate for public medical office must pass. It is impossible for men who have merely passed through the ordinary medical curriculum to deal satisfactorily with many of the questions that arise in the course of their public health work. Special instruction must therefore be given as to the distribution of disease, medical topography and meteorology, on the effects of trades, over-crowding, &c., as well as in the general subjects included under the head of public hygiene and in the laws relating to public health.

The distinctions between urban and rural sanitary districts would then have been removed, and the areas for local sanitary self-government would be, as much as possible, based upon the registration districts and sub-districts of the country. All the statistical and administrative areas should be continuous, and their authorities consolidated, so that the data obtained from the former could be at once made available in the latter.

The districts should be large enough to secure an efficient and well-paid, yet comparatively economical, organisation of permanent officials who could be removed only for misconduct, with power of appeal to the central office. There might be also in each county or suitable division of a county, "representative authorities of a high order for the execution of joint works, and to aid and in case of default, to exercise control over district sanitary authorities."*

* Memorial of the Joint Committee on State Medicine, 1877.

And yet the relations of the local authorities to the Government need not be by any means onerous nor tainted by the vice of over centralisation. Compulsory regulations should certainly be made as to the provision of good water, the removal of nuisances, efficient drainage and sewage arrangements; but the mode in which these several departments of work are to be carried out might be left entirely within the control of local authorities.

The central office would freely offer the assistance of its well-trained inspectors and encourage all persons, both in public and private, to take advantage of its stores of special knowledge and experience—but it would leave all communities at liberty to select those methods and those appliances, that might seem best suited to the locality with whose wants they might be presumed to be most thoroughly acquainted. In this way a true education of the country in sanitary matters would be promoted, and many of the evils of a bureau-cratic form of government would be avoided.

It is possible, too, that by this time local sanitary administration would be assisted, as Dr. Buchanan so much desires, by the formation, in every locality, of voluntary sanitary associations similar to the one that has now existed in this city for more than a quarter of a century, and which is still doing good work.

I have purposely said nothing as to the vexed question of the proper relations between the poor law medical service and the department of Public Health. This is far too wide a subject to take up now—but I may perhaps express a hope that in our still unseen universe the whole system of medical relief to the poor will have been remodelled. The mode in which it is now carried on is at once inefficient and costly, penurious and extra-

vagant—and unjust both to the poor man and to his medical attendant.

It leads to delay and carelessness in the treatment of disease—it deprives the sick person of any right of choice in the matter of medical attendance, and it imposes unwilling and therefore unsatisfactory and captious patients upon the medical man.

A much more efficient, equitable, and more economical plan would be one based upon the provident principle, a principle which, as Dr. Ogle of Derby has shown, is applicable to both poor and rich, and which involves the truest form of preventive medicine.

In any case let us hope that the people will gradually be taught to see the vast importance of the subject, and that thus an enormous amount of suffering, premature decay, and death may be averted from the nation.

APPENDIX.

TABLE I.

RESULTS OF DRAINAGE AND IMPROVED WATER SUPPLY.

B. means "before," A. "after" the sanitary works had been carried out.

Population in 1861.	Towns.	Periods.		Death-rate per 10,000.		Typhoid		Diarrhoea.		Cholera.			Phthisis		Infant Mortality.	
		B.	A.	B.	A.	B.	A.	B.	A.	1849.	1854.	1866.	B.	A.	B.	A.
68,056	Leicester ...	'45-'51	'62-'64	264	252	14	7	16	19	1	10	—	43	29	84	81
52,778	Merthyr	'45-'55	'62-'65	332	262	21	8	11	6	267	84	20	39	34	80	61
39,693	Cheltenham.	'45-'57	'60-'65	194	185	8	4	8	7	—	—	—	28	21	40	37
30,299	Croydon	'45-'50	'57-'64	237	190	15	5	10	7	27	21	2	—	—	—	—
27,475	Macclesfield.	'45-'52	'57-'64	298	237	14	8	11	11	9	1	—	51	35	77	60
24,756	Newport ...	'45-'49	'60-'65	318	216	16	10	11	6	112	2	12	37	25	67	53
23,108	Dover.....	'43-'53	'57-'65	225	209	14	9	9	7	40	10	4	26	21	48	46
10,570	Warwick ...	'45-'55	'59-'64	227	210	19	9	6	8	10	—	—	40	32	51	46
9,030	Salisbury ...	'44-'52	'57-'64	275	219	8	2	6	2	180	14	—	44	22	43	40
5,805	Worthing ...	'43-'52	'57-'65	155	153	7	9	4	5	—	—	—	30	19	24	22

TABLE II.

DISTRICTS OF ENGLAND AND WALES SHOWING SOME IMPROVEMENT IN THE ANNUAL RATE OF MORTALITY IN THE THREE DECADES 1841-50, 51-60, 61-70.

Number of District.	NAME OF DISTRICT, &C.	REGISTRATION COUNTY.	ENUMERATED POPULATION.		AVERAGE ANNUAL MORTALITY.		
			1861.	1871.	Deaths to 1,000 living.		
					1841-50.	1851-60.	1861-70.
182	North Witchford	Cambridge..	14,791	15,585	27	21	20
183	Whittlesey	Cambridge..	6,966	7,002	25	23	21
184	Wisbech	Cambridge..	33,309	34,209	25	22	20
189	Orsett	Essex.....	11,595	13,172	24	21	18
254	Salisbury	Wilts.....	9,039	9,212	28	24	20
279	Stoke Damerel..	Devon.....	50,440	49,449	26	23	21
372	Wolverhampton	Stafford.	126,902	136,053	27	28	24
393	Coventry	Warwick....	41,647	40,113	27	25	21
446	Macclesfield.....	Chester.....	61,543	59,339	26	25	23
520	Hull	York	56,888	68,316	31	25	26
582	Newport	Monmouth..	51,412	61,252	24	22	21
585	Merthyr Tydfil..	Glamorgan..	93,008	104,239	28	29	25
605	Crickhowell.....	Brecknock..	22,457	20,147	27	25	23

TABLE III.

SANITARY WORKS *versus* INCREASED DENSITY OF POPULATION.

Popu- lation in 1871.	Towns.	Acres per Head.		Mortality ~ r. 1,000		Mortality calculated from Density.	Annual Saving of Life.
		'41 to '50.	'61 to '70.	'41 to '50.	'61 to '70.		
14,600	Stonehouse ...	0·02	0·01	29·	27·	31·51	50
231,015	Birmingham...	0·02	0·01	26·	27·	28·25	289
68,833	Plymouth	0·04	0·02	25·	23·	27·17	276
86,621	Nottingham ...	0·03	0·02	26·	24·	27·30	285
49,449	Stoke Daml....	0·05	0·04	26·	21·	26·71	279
113,575	Portsea Isld....	0·08	0·05	25·	21·	26·45	518
95,220	Leicester	0·07	0·04	27·	26·8	28·87	266
128,890	Salford	0·08	0·05	28·	27·	29·62	335
173,988	Manchester ...	0·06	0·05	33·	32·	33·73	296
62,833	Derby	0·08	0·06	24·	23·	24·84	113
40,133	Coventry	0·16	0·13	27·	21·	27·68	268
342,935	West Derby ...	0·34	0·14	26·	26·	28·92	992
126,982	Oldham	0·21	0·14	26·	26·	27·30	165
33,342	Reading	0·23	0·16	24·	22·	25·00	100
22,644	Alverstone ...	0·25	0·17	24·	19·	25·14	138
357,713	Bradford	0·26	0·18	25·	25·	26·12	260
106,626	WestBromwich	0·32	0·19	23·	19·	24·48	580
3,254,260	London	0·04	0·20	25·	24·	27·17	9,000

